YUKON GOVERNMENT CLIMATE CHANGE ACTION PLAN

SEPTEMBER 2012

PROGRESS REPORT

TAKING ACTION ON CLIMATE CHANGE

Yukon Government

" It's the great, big, broad land 'way up yonder,
It's the forests where silence has lease;
It's the beauty that thrills me with wonder,
It's the stillness that fills me with peace."

Robert Service — *Spell of the Yukon*

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Copies available from:
Climate Change Secretariat
Box 2703, (V-205), Whitehorse, Yukon Y1A 2C6
Email: climatechange@gov.yk.ca
www.env.gov.yk.ca

MINISTER'S MESSAGE

Like other northern regions, Yukon is experiencing the effects of climate change much more intensely than our neighbours to the south. The Government of Yukon recognizes that these changes pose opportunities as well as serious challenges to our unique quality of life. Through the leadership of the Climate Change Secretariat, we are undertaking a wide range of actions and research to help ensure our economy, quality of life, and environment continue to thrive despite our changing climate.

Since the development and release of the government's Climate Change Action Plan in 2009, considerable progress has been made on the priority actions identified. This progress report sets out the significant work done throughout the government and a lot of hard work by individuals to address those actions.

The Government of Yukon expects our economy to continue to grow in the years to come, so we must continue to take action to ensure that such economic development minimizes the contribution to global climate change and considers its effects on our environment. I recognize that we cannot undertake this alone, and I am encouraged by the strength of our continuing partnerships, particularly with the federal government, the Yukon Research Centre, and Cold Climate Innovation. Through such partnerships it is possible to promote and support action, identify opportunities, and develop the technology needed for adaptation.

While some see a contradiction between responding to climate change and a developing economy, I see an opportunity. I believe that the scientific research being undertaken to better understand the effects of our changing climate, and the technology being developed to help us adapt to those changes, will provide lasting economic benefits to Yukon. As well, we have an opportunity to demonstrate responsible and sustainable economic development.

Although we tend to focus on the local benefits of these efforts, we must remember the broader context of the challenge we face. It is my hope that the actions we take here in Yukon will contribute to the broader national and global effort, and that we are able to offer uniquely northern solutions to what is truly a global challenge.

Hon. Currie Dixon
Minister of Environment

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INTRODUCTION

The Yukon government recognizes that climate change is happening, that human behaviour is a major contributor, and that a coordinated response is needed. The Yukon government has made significant progress on the climate change actions outlined in the 2009 *Climate Change Action Plan*. These actions demonstrate the government's long-term commitments to responding effectively to climate change.

This report details progress made on the Yukon government's 33 priority climate change actions and on actions that have developed over the last three years.

YUKON'S CLIMATE IS CHANGING

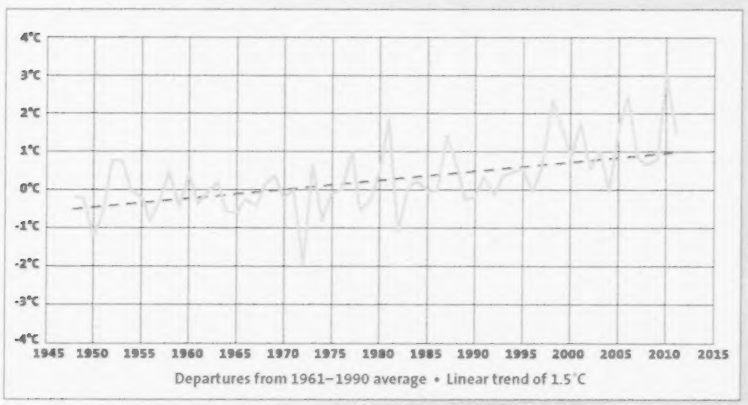
Globally, human dependency on fossil fuels, increasing industrial activities, and clearing of forests for development and agriculture have resulted in elevated levels of greenhouse gasses in the atmosphere. These gasses trap in heat which in turn shift global temperature, wind and precipitation patterns.

Yukon's temperature, wind and precipitation patterns have experienced significant changes. Since 1948, Yukon's annual average temperature has increased by 2.2°C and the average winter temperature by 5.5°C (Environment Canada, Trends and Variations, 2011). In comparison, Canada's overall average temperature has increased by 1.5°C and Canadian overall winter temperatures have increased by 3.6°C in the same period (Environment Canada, Trends and Variations, 2011). Yukon is experiencing altered precipitation patterns, especially in winter, with snowfall and rain patterns outside of usual climate expectations (Environment Canada, Trends and Variations, 2011). There are also more extreme and unexpected weather events, such as flooding (Beasley, 2010), and increased lightning activity correlated to an unstable atmosphere (Purves, 2006).

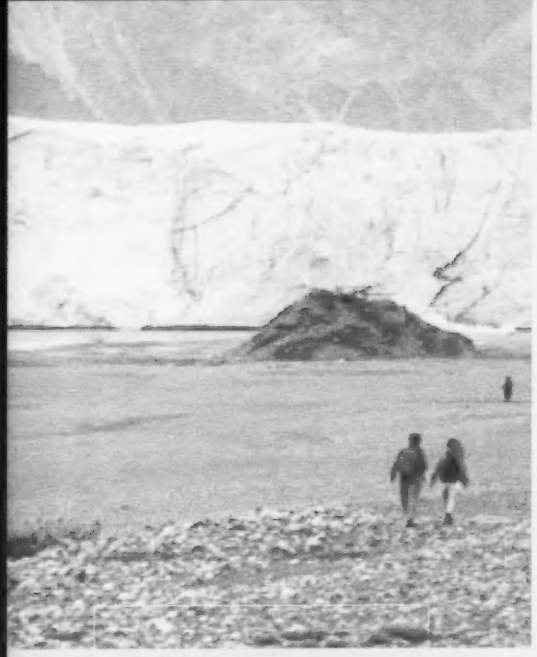
Northern latitudes are particularly sensitive to climate change because they contain much of the world's cryosphere, or areas where negative temperatures and solid water exist. Ice, glaciers, permafrost and snow cover are examples of physical environments that are particularly sensitive to a warming climate (Prowse, Furgal, Melling & Smith, 2009).

TEMPERATURE TRENDS

The red line indicates annual Canadian temperatures have warmed 1.5 °C over the last 63 years.



Source: Environment Canada, Science and Technology Branch, Climate Research Division, 2011



Glaciers in Yukon are getting smaller. Since 1958, glaciers have decreased in size by 22% (Barrard and Sharp, 2010)

HOW CLIMATE CHANGE AFFECTS YUKONERS

Scientific research, traditional knowledge and personal experience all point in the same direction: our climate is changing and Yukon's land, wildlife, and people are directly affected.

Shifting Biomes

Areas with distinctive plant and animal species, known as biomes, are shifting due to climate change. Southern plants and animals, for example, are moving north as Yukon's climate warms. Shifting biomes can lead to the spread of invasive species, the spread of illnesses and parasites, disruption of traditional food sources, and, encouragingly, an increase in agricultural opportunities.

Members of the White River First Nation in Beaver Creek are noticing different bird migration patterns, lower berry crop yields associated with less precipitation, and a decrease in the population of the local caribou herd (Guyot, Dickson, Paci, Furgal & Chan, 2006).

Melting Glaciers

Increasing temperatures in the north are causing Yukon's glaciers to melt. Since 1958, Yukon glaciers have lost 22 per cent of their surface area and have contributed on average 1.13 mm to global sea level rise (Barrard and Sharp, 2010). Melting glaciers can also cause local or regional water shortages and localized flooding.

Thawing permafrost

Over half of the places where permafrost existed in 1964 along the Alaska Highway (from the City of Whitehorse to Fort St. John) no longer contain permafrost. Where permafrost is still present, the active layer, where seasonal thawing occurs, has increased in depth (Bryan, Hinzman & Busey, 2008). Permafrost thaw is causing expensive damage to Yukon's roads and buildings. For example, annual repair costs on the permafrost-damaged 200 kilometre stretch of highway between Destruction Bay and the US border averages $30,000 per kilometre, or $6 million each year. Permafrost free stretches of highway, in contrast, average about $4,000 per kilometre. Permafrost thawing has led to slumping as seen on Herschel Island (Pollard and Lantuit, 2008) and to more frequent landslides.

Umbellate Hawkweed (Hieracium umbellatum) – Once a rare plant found near hot springs, Narrow-leaf Hawkweed is starting to spread along roadsides and now is growing in thick patches as far west as Whitehorse

Extreme, unprecedented or unexpected weather events

Yukoners are seeing more extreme weather events including lightning storms and flash floods, as well as periods of increased precipitation and dry-periods. Warmer temperatures in the Dawson City area have led to ice-jam floods (Beasley, 2010). Dawson City and Mayo are expected to see a 60 per cent increase in forest fires by 2035 (McCoy and Burn, 2005).

Ian Stewart

Whitehorse produce shelves were almost empty three days after flooding closed the South Alaska Highway in June 2012. Several landslides and washouts prevented all vehicles from traveling north of Watson Lake, limiting grocery and fuel supplies to Yukon communities. Yukon's changing climate means that extreme weather events may become more common.

PROGRESS ON YUKON GOVERNMENT CLIMATE CHANGE ACTIONS

In 2009, the Yukon government released its *Climate Change Action Plan* detailing its response to climate change. The Action Plan is built on the Government of Yukon *Climate Change Strategy* which outlines the government's role and the four goals for its response to climate change:

#1 – ENHANCING KNOWLEDGE AND UNDERSTANDING OF CLIMATE CHANGE,

#2 – ADAPTING TO CLIMATE CHANGE,

#3 – REDUCING GREENHOUSE GAS EMISSIONS, AND

#4 – LEADING YUKON ACTION IN RESPONSE TO CLIMATE CHANGE.

PRIORITY ACTIONS AND DEVELOPING ACTIONS

When the *Climate Change Action Plan* was created in 2009, it recognized that not all actions or goals could be achieved at the same time. The Action Plan therefore included 33 'priority' actions; the bulk of this Progress Report is dedicated to updates on these priority actions. The Action Plan also highlighted actions that require additional information, research, regulations, policy or resources. In this Progress Report they are called 'developing' action items.

RESEARCH

GOAL #1 – ENHANCING KNOWLEDGE AND UNDERSTANDING OF CLIMATE CHANGE

In order to take thoughtful and effective action to address Yukon's changing climate, a solid foundation in understanding climate change is necessary. The Yukon government uses local, national and international research and information to help identify Yukon's climate change needs. Since releasing the *Climate Change Action Plan*, the Yukon government has accomplished its 'priority' and 'developing' actions under Goal #1. The Yukon government continues to support research in Yukon.

Priority Action: Research

The Yukon government, in partnership with the Council of Yukon First Nations and Yukon College, established the ***Yukon Research Centre*** (YRC) at Yukon College in October 2009 to develop collaborative research, innovation and outreach projects to meet the needs of Yukoners. In March 2012, the Yukon government committed $2.2 million over two years to further support the Yukon Research Centre's activities. The Yukon government also committed $2.8 million over five years for Cold Climate Innovation, a division of the Yukon Research Centre, to enable the continuing development and commercialization of cold climate technologies to address the needs of northerners and their communities.

The Yukon government ***established climate change research study areas*** with the Council of Yukon First Nations, Yukon College, the University of Northern British Columbia and the departments of Environment, Energy Mines and Resources, and Highways and Public Works. With funding from Indian and Northern Affairs Canada (now known as the Department of Aboriginal Affairs and Northern Development), Yukon government departments and partners completed adaptation projects to:

- Study climate change impacts on water, forests, permafrost and infrastructure,
- Identify climate change priority areas of concern for Yukon communities, and
- Support the development of regional climate change scenarios.

The Yukon government supported the development of ***regional climate change scenarios*** with the Yukon Research Centre and the Council of Yukon First Nations. This project, funded by the Department of Aboriginal Affairs and Northern Development, supports local scenarios modelling using Yukon climate change data. This project will enable Yukoners to make informed adaptation and planning decisions in a changing climate.

Developing Action: Training

Since 2009, the Yukon government's Energy Solutions Centre and Yukon Housing Corporation have offered renewable energy and energy efficiency courses to building and energy professionals and to the Yukon public. Course topics included: do-it-yourself help for home builders; training on the LEED (Leaders in Energy and Efficiency Design) standard; education on alternative energy systems for heating, residential ventilation and indoor air quality; training on fleet vehicle fuel efficiency; and training and certification of home energy evaluators.

THE ENERGY STRATEGY FOR YUKON
Details a long-term vision for the responsible development of energy resources for Yukon. Energy and environment are inextricably linked. The *Energy Strategy for Yukon* was developed in tandem with the *Climate Change Action Plan* to help ensure both deal with common issues in a consistent and complementary manner.

The Yukon Research Centre at Yukon College

ADAPTATION

GOAL #2 – ADAPTING TO CLIMATE CHANGE

The effects of climate change are felt intensely in Canada's north. The Yukon government is dedicating attention, time and resources so that effective adaptation measures are taken across the territory. Adaptation is both the act of coping with the negative impacts of climate change and embracing the opportunities that may arise. The Yukon government is taking action to ensure that adaptation research and innovation projects deliver lasting positive benefits for Yukoners. These projects increase our knowledge and awareness of the risks associated with climate change, build resilience and capacity to address these risks, and develop and implement creative and innovative solutions that work in our northern environment.

From 2008-2011, the federal Department of Aboriginal Affairs and Northern Development provided the Yukon government with $2.1 million over four years for adaptation projects dealing with water resources, building infrastructure, forests, and climate change scenario development. The department provided additional funding in May 2012 to support nine adaptation projects in Yukon over four years including: documenting ecosystem changes; flood risk mapping; and the impact of thawing permafrost on Yukon highways, agriculture, and water resources.

The Yukon government continues to work with local, territorial, provincial, national and international partners on adaptation initiatives that benefit Yukoners. Through partnership with Cold Climate Innovation and the Northern Climate ExChange, the Yukon government benefits from northern specific research and innovation projects that strengthen resilience to climate change impacts. Through the *Pan-Territorial Adaptation Strategy*, the Governments of Yukon, Northwest Territories and Nunavut are working together on climate change with a focus on practical adaptation measures. This partnership will host a permafrost adaptation workshop in 2013 to bring together adaptation professionals and researchers to examine and address the impacts of thawing permafrost.

In the national and international arena, Environment Yukon staff continue to participate in climate change negotiations and program development to ensure that Yukon and northern needs are effectively addressed.

Taking timely, effective adaptation measures will contribute to the ongoing health and safety of Yukoners, advance northern innovation projects, and enable us to flourish in the face of a changing climate.

ADAPTATION PROJECTS PAST, PRESENT AND FUTURE

The Yukon government's Climate Change Secretariat, in partnership with the Council of Yukon First Nations and the Northern Climate ExChange, Yukon College, hosts annual Adaptation Practitioners' Forums. At these forums, adaptation practitioners from across Yukon learn about other projects, identify opportunities for collaboration, and attempt to strengthen Yukon's ability to effectively adapt to climate change. This map shows where adaptation projects are taking place across the territory. In addition to the past, present and proposed projects shown here, 11 additional adaptation projects are Yukon-wide in scope.

Priority Action: Infrastructure

The Department of Highways and Public Works, in partnership with the Yukon Geological Survey and the Department of Aboriginal Affairs and Northern Development, completed a multi-year ***infrastructure risk and vulnerability assessment*** of Yukon government buildings in areas where permafrost is thawing.

In addition to identifying infrastructure adaptation strategies, researchers from the Yukon Geological Survey created an ***inventory of permafrost information*** to facilitate and encourage cooperative and collaborative permafrost related work and research activities. *www.permafrost.gov.yk.ca*

Priority Action: Water

The Water Resources Branch of Environment Yukon, with Department of Aboriginal Affairs and Northern Development funding, completed a ***water resources risk and vulnerability assessment*** that highlights current and forecasted water resource issues in Yukon related to climate change.

The associated ***web-based information tool*** provides water data and information useful to water users and water managers wanting to adapt their water programs to a changing hydrologic regime. *yukonwater.ca*

Researchers at St. Andrew's Church, Dawson, engage in permafrost studies.

ADAPTATION

Environment Yukon monitors bat colonies in the southern Yukon. They're quite sensitive to climatic effects and may be a possible early warning of a shifting climate.

Priority Action: Forests

The Yukon government is working on projects associated with the risks to Yukon forests and communities posed by climate change. The Forest Management Branch of the Department of Energy, Mines and Resources completed a ***Yukon forest health risk assessment*** to identify forest health concerns and is using a risk-based approach to address these concerns.

The Forest Management Branch is working on adaptation measures due to increased forest fires and associated threats to communities. Since 2009, the Branch has ***reduced forest fuel loads*** in 105 hectares of forest in southwest Yukon. In collaboration with the Champagne and Aishihik First Nations, the Branch has secured Northern Strategy Trust Fund funding to continue this work.

The Branch also conducted a ***Yukon forest tree species and vulnerability assessment*** in partnership with the Department of Aboriginal Affairs and Northern Development to help decision makers understand the risks and opportunities associated with changes in our forests due to climate change.

Scott Green

Forestry researchers from the University of Northern British Columbia conducting work near Teslin.

Developing Action: Biodiversity

The Yukon government participates in and leads biodiversity monitoring programs that include climate change elements, such as the Wolf Creek Research Basin, the Arctic Borderland Ecological Knowledge Co-op, and the Community Ecological Monitoring Project.

In the summer of 2010, a community greenhouse was constructed in Dawson on land donated by the Tr'ondek Hwech'in. Funding for the greenhouse came from the Community Climate Change Adaptation Project.

Developing Action: Land Use Planning

The Yukon government works to ensure that climate change considerations are incorporated into land use planning projects. During the recent "Issues and Interests" phase of the Dawson regional planning process, the Yukon government worked with the regional planning commission to identify climate change as a key issue and provided planning advice related to climate change.

Developing Action: Community Adaptation Planning

The Yukon government, in partnership with the Northern Climate ExChange, secured $1.21 million from the Northern Strategy Trust Fund to complete the Community Climate Change Adaptation Project. The resulting community adaptation plans help Whitehorse, Mayo and Dawson City prepare for climate change by evaluating vulnerabilities and identifying plans to adapt to climate change challenges or opportunities.
www.taiga.net/nce/adaptation/projects.html

Developing Action: Emergency Response Planning

The Yukon Emergency Measures Organization is working on detailed 'hazards and risks vulnerability assessments' for Yukon communities. These assessments support planning and provide assistance to Yukon communities in developing emergency preparedness plans for any current and future potential threats.

Developing Action: Building Standards

The Department of Community Services, in collaboration with the City of Whitehorse, is continuing its work on improving energy efficiency in new buildings. Yukon Housing and Community Services staff assisted in the development of an insulation and ventilation standards bylaw for the City of Whitehorse. Bylaw 2009-16 was implemented in September 2009.

Developing Action: Agriculture

The Yukon government is supporting the local production and sale of agricultural products, contributing to community sustainability and food security. The Agriculture Branch is researching plant varieties most suited for production in the north, evaluating market economics, and determining the effects of changing permafrost conditions on agricultural production. Initiatives to develop rural agriculture include funding for building infrastructure, community gardens, farm markets, training, and risk management.

Developing Action: Human Health

A warming climate may lead to northward shifts in the distribution of parasites and diseases affecting animals and humans. The Yukon government, along with other circumpolar jurisdictions, is monitoring the health-related impacts of climate change.

GOAL #3 – REDUCING GREENHOUSE GAS EMISSIONS

Due to Yukon's northern setting, the transportation sector and the heating of commercial and residential buildings produce significant greenhouse gas (GHG) emissions. The Yukon government is committed to reduce GHG emissions from government operations and is working collaboratively to manage GHG emissions Yukon-wide.

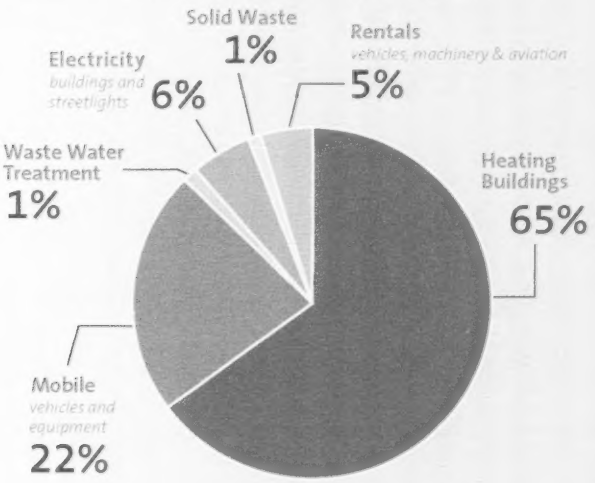
Priority: Yukon government operations

The Yukon government ***has set targets for its internal operations:*** cap GHG emissions at the level of emissions in 2010, reduce GHG emissions by 20 per cent below the cap by 2015 and work towards becoming carbon neutral by 2020.

The Yukon government ***reports its yearly GHG emissions to The Climate Registry,*** a non-profit organization that establishes standards for businesses and governments in North America to calculate, verify and publicly report their carbon footprints.

The Climate Change Secretariat collected, calculated and submitted the Yukon government's 2010 energy and fuel consumption data to The Climate Registry. The data was independently verified by external auditors and we now know that the Yukon government generated 43.7 kilotonnes (calculated) of GHG emissions in 2010. With the Yukon government's audited baseline established, annual reports on GHG emissions from internal government operations and activities will be available.

YUKON GOVERNMENT GHG EMISSIONS 2010



CARBON NEUTRAL
Maintaining an equal balance between producing and storing carbon. For example, the production of carbon-dioxide emissions can be off-set, or made neutral, by undertaking carbon-reducing activities such as planting trees in urban areas or buying carbon offsets from a wind energy company.

The Yukon Corrections Infrastructure Project is striving for LEED Silver Certification by incorporating these energy saving features into the design:

1) Installation of a 950 kilowatt Veiesmann Biomass boiler using wood pellets for fuel. This is the primary source of heating for the building with two propane fired boilers as backup.
2) Low voltage lighting controls and high efficiency fixtures throughout.
3) Public transit has added a bus stop to the entrance of the facility.
4) Bicycle racks have been installed.
5) Low maintenance landscaping and yard maintenance on the site.
6) Possible purchase of a hybrid vehicle for staff use.
7) Use of high density spray foam insulation on exterior wall assemblies.

GREENHOME STANDARD
The Yukon Housing Corporation is using building techniques for its new housing units to make more efficient use of energy and to reduce heating costs.
www.housing.yk.ca/energy.html

In recognition of outstanding achievement in reporting and managing its carbon footprint, The Climate Registry awarded the Yukon government **Climate Registered Silver Status** in April 2012. This honour was given to the Yukon government for its clear GHG emission reduction goal, establishment of a base year and a timeline to achieve its expected reductions, and for demonstrating at least five GHG reduction best practices.

SILVER
Climate Registered™

The Climate Change Secretariat is continuing its work on a ***carbon offset policy*** that will focus on encouraging investment in Yukon-based initiatives and businesses. The offset mechanism will assist the Yukon government in working towards becoming carbon neutral by 2020.

The Yukon government's ongoing efforts to reduce GHG emissions include looking at all government sourcing and purchasing decisions. The ***Green Procurement Policy*** was established in June 2010. It incorporates consideration of climate change into the government's goods, construction and services procurement decisions.

The Yukon Housing Corporation adopted ***GreenHome energy efficiency standards*** for its government funded home ownership programs. All new construction done by the corporation is now built to the new GreenHome standard. Lower energy needs for these homes results in fewer GHG emissions and reduced home heating costs compared to conventionally built homes.

The Property Management Division of the Department of Highways and Public Works implemented new energy efficiency standards for government funded commercial and institutional construction and renovation. New construction uses ***LEED (Leaders in Energy and Efficiency Design) standards*** to influence design and construction for high energy efficiency.

In its continued efforts to improve energy efficiency and ***reduce the GHG emissions of the government's light vehicle fleet,*** the Supply Services Branch of the Department of Highways and Public Works has implemented a new policy where fuel economy is a major factor when making vehicle purchases. Forty-two new vehicles were purchased in 2011/12 with better fuel efficiency than the models they replaced.

MITIGATION

Waste stations in a Whitehorse elementary school

The Yukon government implemented an ***Environmental Stewardship Initiative*** to help reduce GHG emissions in Department of Education facilities. An Environmental Stewardship Coordinator, hired in 2010:

- Implemented a waste diversion program in six Department of Education facilities.
- Purchased and used software designed to optimize school bus routes and reduce emissions.
- Completed a public transit pilot project with students from FH Collins and Vanier schools in partnership with the City of Whitehorse.
- Installed new energy efficient lighting for three Whitehorse schools.
- Completed the design of the new FH Collins school to LEED standards; designers are continuing to pursue inclusion of an innovative geothermal heat system.
- Monitored heat energy consumption, foundation temperature, domestic hot water energy and HRV performance in several Yukon Housing Corporation owned units.

Green Action Committees have been established in all Yukon government departments to help identify, develop and implement actions to support the further reduction of GHG emissions by departments.

With knowledge that energy use in buildings is the biggest contributor to government GHG emissions, the Property and Management Division is working to complete an ***energy analysis*** of all Yukon government buildings and is continuing to conduct ***energy saving retrofits.***

The Policy Branch of the Department of Energy Mines and Resources is continuing the development of ***best management practices for industries to reduce GHG emissions;*** work began in 2011 on best practices for the oil and gas industry.

Priority Action: Transportation

The Energy Solutions Centre and the Climate Change Secretariat are in the process of completing an extensive ***study of the transportation sector*** which will be used as a baseline from which to develop options to reduce GHG emissions.

The Motor Vehicles Branch of the Department of Highways and Public Works ***encourages the use of fuel efficient transportation*** and is working with Natural Resources Canada to improve fuel efficiency by promoting efficient driving practices. The Branch has included information on fuel efficiency in the new *Yukon Driver's Basic Handbook for Cars and Light Trucks* and will be including a specific chapter on fuel efficient operation of vehicles in the new *Commercial Driver Handbook* slated for March 2013. The *Making the Shift: Smart Driving for Professional Drivers* brochure has been distributed to all Motor Vehicles offices. All Class 1 and 5 commercial written exams will have questions relating to fuel efficient operation of vehicles.

Priority Action: Commercial and Residential Buildings

The Energy Solutions Centre and the Yukon Housing Corporation undertook ***pilot projects to demonstrate home and commercial energy efficiency and new heating technology including:***

- Heat pump monitoring in three homes,
- A feasibility assessment of district heating in the City of Whitehorse,
- A solar irrigation system with the Little Salmon/Carmacks First Nation,
- The feasibility of biomass heating system for two City of Whitehorse area schools and the government's sign shop,
- Solar photovoltaic system monitoring in five facilities around the territory, and
- Use of innovative building insulation techniques and design including the use of Vacuum Insulated Panel technology.

The Yukon Housing Corporation ***trained home energy auditors*** so that more people can have access to energy evaluations to improve the energy efficiency of their homes. Auditor training for residential buildings was delivered in 2008, 2010 and 2011. Commercial building energy auditing courses were delivered in March 2009.

The Department of Energy, Mines and Resources is in the advanced stages of developing a draft biomass energy strategy that will support ***wood energy opportunities for residential and institutional heating.***

Developing Action: Solid Waste Sector

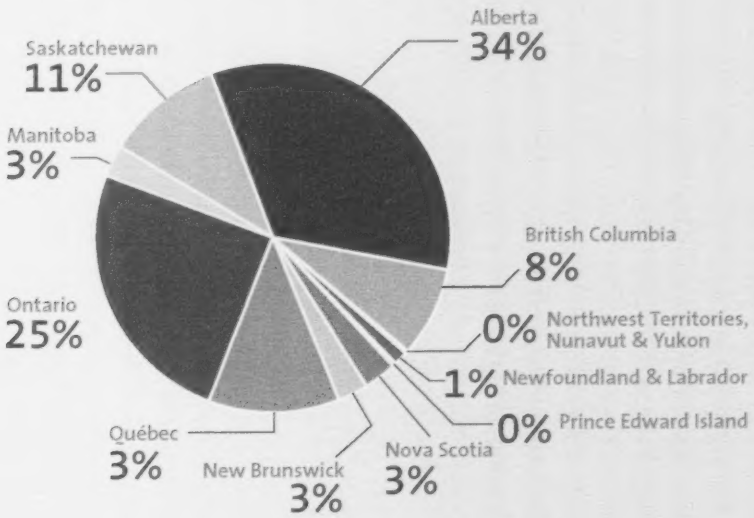
The Yukon government continued its support for community recycling depots and non-governmental recycling organizations, working to reduce waste creation, promote public awareness, and encourage diversion.

Yukon Housing has built over 120 superinsulated staff and social housing units including this house in Watson Lake

GOAL #4 – LEAD YUKON ACTION IN RESPONSE TO CLIMATE CHANGE

The Yukon government recognizes that climate change is happening and that government leadership, coordination, and partnership are essential. Yukon's GHG emissions account for less than one per cent of Canada's emissions (Environment Canada, 2012), which in turn contribute less than one percent of global GHG emissions (UNFCCC Secretariat, 2011). In order to have a meaningful impact on GHG emissions, the Yukon government must work with others. The following activities reflect this reality.

CANADA'S 2010 GREENHOUSE GAS EMISSIONS



Priority Action: Emission Targets

The federal government reports Yukon's GHG emissions in the National GHG Inventory report. In order to **ensure that the National GHG Inventory is accurate and consistent for Yukon,** the Yukon government's Climate Change Secretariat continues to collaborate with Environment Canada on ways to improve the accuracy of federal data collection for the Yukon context.

Despite Yukon's relatively small volume of GHG emissions, the government recognizes the importance of managing GHG emissions and is prepared to lead the work needed to do this. Originally, the Yukon government committed to managing GHG emissions through the use of a Yukon-wide target. Climate Change Secretariat staff worked with technical experts throughout 2011 using economic and social trend analysis and the National GHG Inventory to attempt to **forecast GHG emissions in Yukon.**

This work led to the conclusion that accurate predictions of what Yukon's population, level of industrial activity, economic growth, and climate trends will be over the next 10—let alone 30—years are not possible.

So, rather than commit to an arbitrary target based on estimated projections of Yukon's economic growth, the government is working with key players in the electricity, building and energy efficiency, industrial, and transportation sectors to identify actions that will lead to realistic and measurable outcomes to minimize growth in Yukon's overall GHG emissions.

BUILDING SECTOR

Buildings and Energy Efficiency Targets

By 2016, increase the average energy efficiency of new residential, commercial and institutional buildings constructed outside of Whitehorse by 25% when compared to buildings constructed to 2011 energy efficiency standards

By 2020, reduce the emissions intensity of existing residential, commercial and institutional buildings across Yukon by 5%

By 2020, meet 20% of government buildings' space heating needs with clean energy sources

Actions to support targets:

- Promote the new EnerGuide for Homes rating system
- Develop a new residential building energy efficiency incentive program
- Implement energy efficiency standards for new buildings Yukon-wide
- Require energy assessments to be completed for clients applying to government energy conservation funding programs
- Invest in capacity development and training for energy assessors
- Promote the energy efficiency retrofit incentive program
- Develop a performance audit program for suspected problem buildings and develop a plan to improve the energy performance of these buildings
- Pilot a community energy planning process with a rural Yukon community and continue energy planning throughout Yukon communities
- Complete a Biomass Energy Strategy

TRANSPORTATION

Transportation Targets

By 2015, reduce emissions from Yukon government light fleet operations by 5%

By 2015, reduce emissions in the transportation sector by 10%

Actions to support targets:

- In co-operation with the federal Department of Natural Resources, educate commercial fleet operators and drivers on driving techniques designed to reduce fuel usage and GHG emissions
- Conduct a review of the transportation sector and identify and implement activities to reduce emissions
- Consider fuel efficiency in vehicle replacement decisions

ELECTRICITY SECTOR

Electricity Sector Targets

By 2020, reduce the emission intensity of on-grid diesel power generation by 20%

By 2016, reduce on-grid electrical energy use through demand-side management programs by 5 GWh

Actions to support targets:

- Replace existing on-grid diesel generation with a lower carbon technology
- Determine the feasibility of a biomass power generation plant
- Complete and implement a Demand Side Management Plan
- Continue to implement energy efficiency programs through the Energy Solutions Centre
- Complete a Net Metering Policy and Independent Power Producer Policy

INDUSTRIAL OPERATIONS SECTOR

Industrial Operations Targets

By 2016, reduce the electrical energy intensity of industrial operations, including mines, which were operating in 2011 by 15%

By 2014, establish reporting protocols for stationary facilities emitting over 2.5 kilotonnes of GHG's per year

Actions to support targets:

- Develop an energy audit service in consultation with industrial operations, including mines
- Communicate energy conservation strategies with industrial operations
- Develop best practices for reducing GHG emissions
- Encourage the use of best available, energy efficient technology in power-purchase agreements
- Encourage feasibility analysis of renewable energy options for new industrial projects
- Work with Yukon operating mines to identify needs and opportunities to conserve electricity and energy, and reduce GHG emissions
- Encourage energy conservation in all new industrial operations to reduce electrical energy demand and minimize GHG emissions

Definitions

ON-GRID
Electricity that is generated and used within the Yukon electrical grid.

DEMAND SIDE MANAGEMENT
Initiatives to encourage us to use energy more efficiently, use less energy during peak periods, or to use a different type of fuel to provide energy.

NET METERING
Electricity consumers who own small, renewable energy generators such as wind or solar can receive a credit for a portion of the electricity they generate.

LEADERSHIP

Emissions reductions efforts within each sector, combined with the Yukon government's own work towards carbon neutral operations by 2020, will support the territory's developing economy, improve energy efficiency, minimize increases in GHG emissions and show leadership nationally and internationally.

Priority Action: Leadership

In early 2009, the Yukon government ***created the Climate Change Secretariat.*** The major role of the secretariat is to ensure the actions in the Climate Change Action Plan are implemented and to provide government-wide leadership and coordination on climate change projects.

The Department of Economic Development has completed initial background work to ***determine the potential for a Yukon carbon economy.*** Further work will be conducted as sector-specific strategies are developed.

The Climate Change Secretariat is working in partnership with the Northern Climate ExChange to ***incorporate climate change considerations into government decision-making.*** The Climate Change Information and Mainstreaming Program offers climate change courses and project support. Since the program's inception in 2010, more than 100 government employees across eight departments have participated in the "Decision Making for Climate Change" course and five government departments or non-government organizations have taken advantage of climate change project support.

Priority Action: Coordination and Partnership Development

The Climate Change Secretariat has hosted five annual ***youth engagement forums*** for taking action on climate change. These forums continue to provide Yukon youth an opportunity to learn about climate change and to get involved in climate change action in the territory. The Yukon government also actively participates in and supports youth at United Nations climate change conferences which focus on global concerns about climate change.

Developing Action: Review and Report

The Yukon government's Climate Change Secretariat and its department partners regularly report progress on climate change actions. The Secretariat will update the *Climate Change Action Plan* as actions are completed and new climate change actions are identified.

THE WESTERN CLIMATE INITIATIVE

A collaboration of independent jurisdictions working together to identify, evaluate, and implement emissions trading policies to tackle climate change at a regional level. This is a comprehensive effort to reduce greenhouse gas pollution, spur investment in clean-energy technologies that create green jobs and reduce dependence on imported oil.

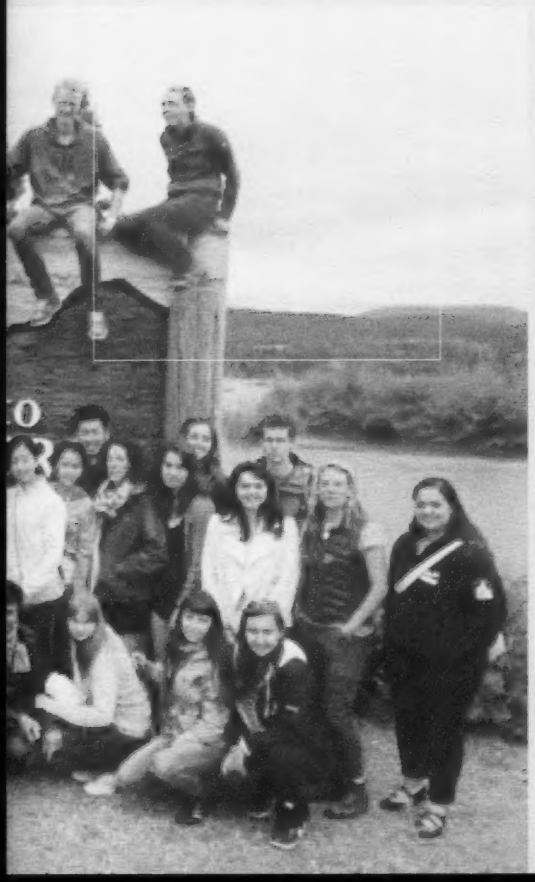
AND THE WORK CONTINUES...

The Yukon government has made significant progress on its commitments in the *Climate Change Action Plan*. By actively addressing Action Plan priorities and developing actions, the Yukon government has both achieved measurable success and strengthened its understanding of the evolving climate change needs in the North. The Yukon government continues to remain flexible and responsive to Yukon's climate change reality by taking action when and where it is necessary. Examples of how the Yukon government has gone above and beyond the call to action in the *Climate Change Action Plan* include:

- The Parks Branch of Environment Yukon made sure its new interpretive centre at Tombstone Territorial Park was built for high energy efficiency by using solar panels, passive heating and natural light.
- The Policy Branch of the Department of Energy Mines and Resources has been working on independent power production and net metering policies. A public consultation on a draft net metering policy was held in the spring of 2011. The policy looked at possible policy objectives, eligible sources, size of projects, grid connection, financial arrangements, role and responsibilities. Net metering appeals to electrical customers who would like to generate electricity for personal consumption and feed relatively small amounts of excess energy into the grid for a credit.
- The Yukon government has joined the Western Climate Initiative—made up of several provinces and American states—as an observer.
- The Climate Change Secretariat developed a *Pan-Territorial Adaptation Strategy* with its counterparts in the Northwest Territories, Nunavut and colleagues in the Yukon government.

The Yukon government continues to demonstrate leadership and make significant progress on adaptation, mitigation, and furthering understanding of climate change in Yukon. The *Climate Change Action Plan* and other climate change achievements not only show that the government is committed to meeting climate change challenges, but that it will respond in ways that provide economic, social and environmental benefits for all Yukoners.

During August of 2012, Yukon hosted 40 participants from 8 northern regions at the Northern Forum Youth EcoForum. The event brought together young participants to develop a greater understanding of climate change.



STATUS OF YUKON GOVERNMENT CLIMATE CHANGE PRIORITY ACTIONS

☑ Action is complete ☑ Action is on-track and continuing ☑ Action is under development

GOAL #1 - ENHANCE KNOWLEDGE AND UNDERSTANDING OF CLIMATE CHANGE

- ☑ Establish a Research Centre of Excellence
- ☑ Establish climate change research study areas
- ☑ Develop climate scenarios

GOAL #2 - ADAPT TO CLIMATE CHANGE

- ☑ Complete a Yukon infrastructure risk and vulnerability assessment and determine adaptation strategies in response
- ☑ Develop an inventory of permafrost information for use in decision making
- ☑ Complete a Yukon water resources risk and vulnerability assessment
- ☑ Create a tool to facilitate the collection and distribution of water quantity and quality data
- ☑ Conduct a Yukon forest health risk assessment
- ☑ Conduct treatments to reduce forest fuel loads and protect communities
- ☑ Conduct a Yukon forest tree species and vulnerability assessment

GOAL #3 - REDUCE OUR GREENHOUSE GAS (GHG) EMISSIONS

- ☑ Yukon government's internal operations:
  - ✓ cap GHG emission in 2010
  - ✓ reduce GHG emission by 20 percent by 2015 and
  - ✓ become carbon neutral by 2020
- ☑ Report on Yukon government operations through 'The Climate Registry'
- ☑ Develop a carbon offset policy for internal operations
- ☑ Incorporate environmental performance considerations in the government's procurement decisions
- ☑ Government-funded new residential construction to meet GreenHome energy efficiency standards
- ☑ Government-funded commercial and institutional construction and renovation will meet or exceed the LEED Certified Standard for energy efficiency
- ☑ Improve energy efficiency and reduce the greenhouse gas emissions of the government's light vehicle fleet
- ☑ Implement an Environmental Stewardship Initiative for the Department of Education and Yukon schools
- ☑ Establish 'green action committees' in all departments
- ☑ Conduct an energy analysis of all Yukon government buildings and complete energy saving retrofits
- ☑ Develop best management practices for industry to reduce GHG emissions
- ☑ Undertake an extensive study of the transportation sector and recommend options to reduce emissions
- ☑ Develop incentives for fuel efficient transportation
- ☑ Develop pilot projects to demonstrate home and commercial energy efficiency and heating technology
- ☑ Improve access to home energy evaluations by providing evaluator training
- ☑ Develop wood energy opportunities for residential and institutional heating

GOAL #4 - LEAD YUKON ACTION IN RESPONSE TO CLIMATE CHANGE

- ☑ Forecast potential future GHG emissions for Yukon
- ☑ Work with federal partners to ensure national GHG Inventory is accurate and consistent for Yukon
- ☑ Set a Yukon-wide emissions target within two years
- ☑ Create a Climate Change Secretariat
- ☑ Determine the potential of a Yukon carbon economy
- ☑ Incorporate climate change considerations into government decision making
- ☑ Create a community engagement forum for taking action on climate change

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